

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO. 29641

In re Application of:

ANDREW J. DILLON, ET AL.

Serial No. 09,089,523

Issued: April 6, 1999

For: PARTIALLY RIGID-PARTIALLY
FLEXIBLE ELECTRO-OPTICAL
SENSOR FOR FINGERTIP
TRANSILLUMINATION

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Examiner: Eric Winakur

Patent Number: 5,891,021

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

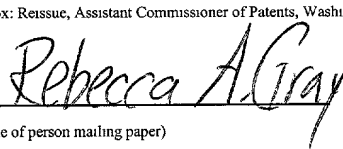
Please amend the above-identified application as follows:

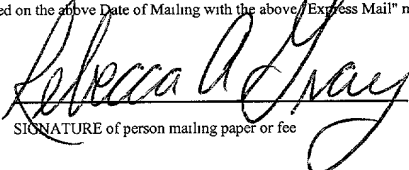
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IN THE CLAIMS

Please amend the claims as follows:

--1. (Amended) A non-invasive electro-optical sensor for removable adhesive attachment to a fingertip of a patient for use in measuring light extinction during transillumination of the blood-profused tissue within said fingertip, said sensor comprising:

an opaque, semi-cylindrical, substantially rigid cradle member having a concave surface, a convex surface and a diameter larger than the diameter of a human fingertip;

a flexible, initially substantially planar web-like support structure attached at one end thereof to said cradle member;

a photosensor mounted on said concave surface of said cradle member;

a light source mounted in said web of said support structure, said light source having a light-emitting surface which directly overlies said photosensor when said support structure is wrapped around a human fingertip within said cradle member; and

an adhesive layer on said concave surface of said cradle member and/or on a surface of the web-like support structure for removably adhesively securing said concave surface of said cradle member to a fleshy portion of a human fingertip such that said concave surface is held in conformance with said human fingertip without stressing said human fingertip.--

2. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 further including means for securing said support structure in a wrapped position around a human fingertip within said cradle member such that said light source directly overlies said photosensor.
3. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of molded polyolefin plastic.
4. (Unchanged) The non-invasive electro-optical sensor according to Claim 3 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of polypropylene.
5. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 further including a recess within said concave surface of said cradle member for receiving said photosensor.
6. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 further including an electrical conductor channel formed within said concave surface of said cradle member.
7. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said support structure is attached at one end thereof to a circumferential portion of said opaque, semi-cylindrical, substantially rigid cradle member such that said support structure can be wrapped around a circumference of said cradle member.
8. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said support structure is attached at one end thereof to an end portion of said opaque, semi-cylindrical, substantially rigid cradle member such that said support structure can be wrapped around an axis of said cradle member.

9. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said adhesive layer comprises a separate double-sided adhesive layer applied to said concave surface of said cradle member.

--10. (Amended) A non-invasive electro-optical sensor for removable adhesive attachment to a fingertip of a patient for use in measuring light extinction during transillumination of the blood-profused tissue within said fingertip, said sensor comprising:

an opaque, semi-cylindrical, substantially rigid cradle member having a concave surface, a convex surface and a diameter larger than the diameter of a human fingertip;

a flexible, initially substantially planar web-like support structure attached at one end thereof to said cradle member;

a light source mounted on said concave surface of said cradle member;

a photosensor mounted in said web of said support structure, said photosensor having a photo-sensitive surface which directly overlies said light source when said support structure is wrapped around a human fingertip within said cradle member; and

an adhesive layer on said concave surface of said cradle member and/or on a surface of the web-like support structure for removably adhesively securing said concave surface of said cradle member to a fleshy portion of a human fingertip such that said concave surface is held in conformance with said human fingertip without stressing said human fingertip.--

11. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 further including means for securing said support structure in a wrapped position around a human fingertip within said cradle member such that said light source directly overlies said photosensor.

12. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of molded polyolefin plastic.

13. (Unchanged) The non-invasive electro-optical sensor according to Claim 12 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of polypropylene.

14. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 further including a recess within said concave surface of said cradle member for receiving said light source.

15. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 further including an electrical conductor channel formed within said concave surface of said cradle member.

16. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said support structure is attached at one end thereof to a circumferential portion of said opaque, semi-cylindrical, substantially rigid cradle member such that said support structure can be wrapped around a circumference of said cradle member.

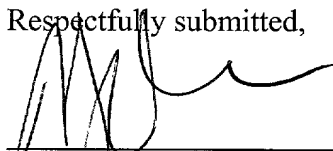
17. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said support structure is attached at one end thereof to an end portion of said opaque, semi-cylindrical, substantially rigid cradle member such that said support structure can be wrapped around an axis of said cradle member.

18. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said adhesive layer comprises a separate double-sided adhesive layer applied to said concave surface of said cradle member.

REMARKS

This preliminary amendment is submitted to correct an error noted in the claims as issued.

Respectfully submitted,



Andrew J. Dillon

Reg. No. 29,634

BRACEWELL & PATTERSON, L.L.P.

Suite 350, Lakewood on the Park

7600B North Capital of Texas Highway

Austin, Texas 78731-1187

(512) 343-6116

ATTORNEY FOR APPLICANT

REDACTED CLAIMS

Please amend the claims as follows:

--1. (Amended) A non-invasive electro-optical sensor for removable adhesive attachment to a fingertip of a patient for use in measuring light extinction during transillumination of the blood-profused tissue within said fingertip, said sensor comprising:

an opaque, semi-cylindrical, substantially rigid cradle member having a concave surface, a convex surface and a diameter larger than the diameter of a human fingertip;

a flexible, initially substantially planar web-like support structure attached at one end thereof to said cradle member;

a photosensor mounted on said concave surface of said cradle member;

a light source mounted in said web of said support structure, said light source having a light-emitting surface which directly overlies said photosensor when said support structure is wrapped around a human fingertip within said cradle member; and

an adhesive layer on said concave surface of said cradle member and/or on a surface of the web-like support structure for removably adhesively securing said concave surface of said cradle member to a fleshy portion of a human fingertip such that said concave surface is held in conformance with said human fingertip without stressing said human fingertip.--

2. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 further including means for securing said support structure in a wrapped position around a human fingertip within said cradle member such that said light source directly overlies said photosensor.

3. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of molded polyolefin plastic.

4. (Unchanged) The non-invasive electro-optical sensor according to Claim 3 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of polypropylene.

5. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 further including a recess within said concave surface of said cradle member for receiving said photosensor.

6. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 further including an electrical conductor channel formed within said concave surface of said cradle member.

7. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said support structure is attached at one end thereof to a circumferential portion of said opaque, semi-cylindrical, substantially cradle member such that said support structure can be wrapped around a circumference of said cradle member.

8. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said support structure is attached at one end thereof to an end portion of said opaque, semi-cylindrical, substantially cradle member such that said support structure can be wrapped around an axis of said cradle member.

9. (Unchanged) The non-invasive electro-optical sensor according to Claim 1 wherein said adhesive layer comprises a separate double-sided adhesive layer applied to said concave surface of said cradle member.

--10. (Amended) A non-invasive electro-optical sensor for removable adhesive attachment to a fingertip of a patient for use in measuring light extinction during transillumination of the blood-profused tissue within said fingertip, said sensor comprising:

an opaque, semi-cylindrical, substantially rigid cradle member having a concave surface, a convex surface and a diameter larger than the diameter of a human fingertip;

a flexible, initially substantially planar web-like support structure attached at one end thereof to said cradle member;

a light source mounted on said concave surface of said cradle member;

a photosensor mounted in said web of said support structure, said photosensor having a photo-sensitive surface which directly overlies said light source when said support structure is wrapped around a human fingertip within said cradle member; and

an adhesive layer on said concave surface of said cradle member and/or on a surface of the web-like support structure for removably adhesively securing said concave surface of said cradle member to a fleshy portion of a human fingertip such that said concave surface is held in conformance with said human fingertip without stressing said human fingertip.--

11. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 further including means for securing said support structure in a wrapped position around a human fingertip within said cradle member such that said light source directly overlies said photosensor.

12. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of molded polyolefin plastic.

13. (Unchanged) The non-invasive electro-optical sensor according to Claim 12 wherein said opaque, semi-cylindrical, substantially rigid cradle member is constructed of polypropylene.

14. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 further including a recess within said concave surface of said cradle member for receiving said light source.

15. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 further including an electrical conductor channel formed within said concave surface of said cradle member.

16. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said support structure is attached at one end thereof to a circumferential portion of said opaque, semi-cylindrical, substantially rigid cradle member such that said support structure can be wrapped around a circumference of said cradle member.

17. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said support structure is attached at one end thereof to an end portion of said opaque, semi-cylindrical, substantially rigid cradle member such that said support structure can be wrapped around an axis of said cradle member.

18. (Unchanged) The non-invasive electro-optical sensor according to Claim 10 wherein said adhesive layer comprises a separate double-sided adhesive layer applied to said concave surface of said cradle member.

